d. Connect an appropriate multimode or single-mode fiber cable to the fiber port of the installed module. It is important to ensure that the transmit (TX) is attached to the receive side of the device at the other end and the receive (RX) is attached to the transmit side. Single-fiber (SF) media converter models operate in pairs. The TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end.

3) VERIFY OPERATION

Once the module has been installed and configured per steps 1 and 2, verify the module is operational by viewing the LED indicators.

The Power LED indicates the module is receiving power.

The Fiber Optic link LED indicates the fiber optic connection has been established.

The Coax LED indicates a T3/E3 signal has been detected.

Function "Legend"	Color	OFF State	ON / Blinking state
Power "Pwr"	Amber	No Power	On: Power available
Fiber Activity "Act"	Green	No valid data	Fast blink (10Hz): Data Received
Fiber AIS "AIS"	Amber	--	Fast blink (10Hz): AIS Received.
Fiber Test detected "TST"	Amber	No Test Data Received	Local unit asserting Remote Loopback: Fast blink (10Hz): Test pattern received. Slow blink (1 Hz): Unexpected pattern received. Special Case: Three quick blinks (2Hz) and pause (1sec.): Illegal dip-switch selection.
Fiber Loopback "FLB"	Amber	Normal	ON: Local Fiber Loopback. If "CLB" also "ON" indicates that the unit is the Local Unit in Remote Loopback Mode. Slow blink (1Hz) and also "CLB" in slow blink: indicates that the unit is the Remote Unit in Remote Loopback Mode.
Coax Loopback "CLB"	Amber	Normal	ON: Local Coax Loopback. If "FLB" also "ON" indicates that the unit is the Local Unit in Remote Loopback Mode. Slow blink (1Hz) and also "FLB" in slow blink: indicates that the unit is the Remote Unit in Remote Loopback Mode.
Coax Activity "ACT"	Green	No valid data	Fast blink (10Hz): Data Received
Coax AIS detected "AIS"	Amber	--	Fast blink (10Hz): AIS Received.
Coax PRBS detected "PRBS"	Amber	--	Blink 10 Hz: PRBS Received. Blink 1 Hz: Forcing PRBS onto BNC-Out.

[1] For complete management support, use a M2 series module (NMM2, GX/TM2, 2GXM2, 10/100M2, 2FXM2) or higher. The T3/E3 SFP (8759-0) module must be at rev xx/10 or greater.

Form 040-08740-002 B 7/09

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Omnitron Systems Technology, Inc.

iConverter® T3/E3 Plugin Module USER MANUAL

The *iConverter* T3/E3 media converter provides standard T3 (44.736Mbps) or E3 (34.368Mbps) coax to fiber conversion and can be used to connect to devices such as PBXs, multiplexers, routers and video servers via fiber. T3/E3 media converters operate in pairs, extending distances over fiber, which improves noise immunity, quality of service, intrusion protection and network security.

The T3/E3 supports Small Form Pluggable (SFP) transceivers, enabling adaptability to different fiber types, distances and wavelengths, providing maximum flexibility across a variety of network architectures and topologies.

Management of the plug-in module is accomplished by using a Management Module[1] (such as an *iConverter* NMM2 or 10/100M2) that provides monitoring, configuration and trap notification.

INSTALLATION PROCEDURE

1) Configure DIP-Switches

2) Install Module in the Chassis and Connect Cables

3) Verify Operation

1) CONFIGURE DIP-SWITCHES

FRONT PANEL DIP-SWITCHES

"FLB" - Fiber Loopback

This DIP-switch facilitates the testing of the fiber cables. When the "FLB" DIP-switch is in the ON position, it sets the fiber port to a Local Fiber Loopback Mode (Figure B) and the "FLB" LED is turned on. When in this mode, data received at the Fiber-In is forwarded to the BNC-Out and the Fiber-Out. If no data is received at Fiber-In, an AIS pattern is transmitted out both BNC-Out and Fiber-Out. By returning the DIP-switch to the OFF position, the unit resumes normal operation.

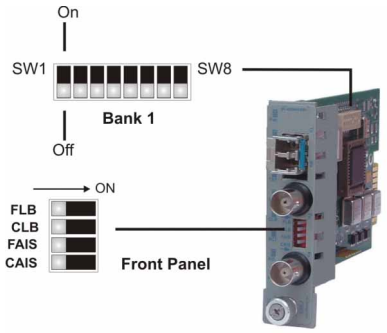

Figure A: DIP-Switch Location

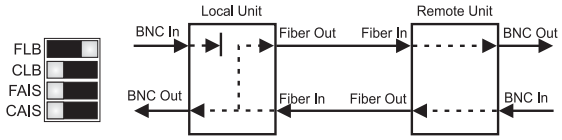

Figure B: Fiber Loopback and DIP-Switch Settings

“CLB” - Coax Loopback

This DIP-switch facilitates the testing of the coax cables. When the “CLB” DIP-switch is in the ON position, it sets the coax port to a Local Coax Loopback Mode (Figure C) and the “CLB” LED is turned on. When in this mode, data received at the BNC-In is forwarded to the BNC-Out and the Fiber-Out. If no data is received at BNC-In, an AIS pattern is transmitted out both BNC-Out and Fiber-Out. By returning the DIP-switch to the OFF position, the unit resumes normal operation.

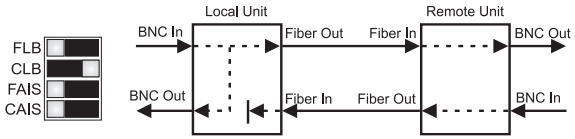

Figure C: Coax Loopback and DIP-Switch Settings

“FLB” + “CLB” - Remote Loopback Mode

When both the “FLB” and “CLB” DIP-switches are in the ON position, they force the remote unit at the other end of the fiber link to loop back its fiber and coax ports (Figure D). This facilitates test of the fiber cables and the remote unit without having to physically set DIP-switches on the remote unit. While in this mode, the local unit’s BNC is set to a local loopback, and its “FLB” and “CLB” LEDs are turned on.

While in the remote loopback mode, the local unit sends a test pattern to the remote unit. This pattern forces the remote unit into the loopback mode and is also returned back to the local unit. When forced into the remote loopback mode, the remote unit’s “FLB” and “CLB” LEDS blink slowly (1Hz).

When the test pattern is received successfully at the local unit’s Fiber-In, the “TST” LED blinks rapidly (10Hz). Any other data causes slow blinking (1Hz) on the “TST” LED. If no data is returned to Fiber-In, the LED is turned OFF.

Returning both DIP-switches to the OFF position, causes the local and remote units to resume normal operation.

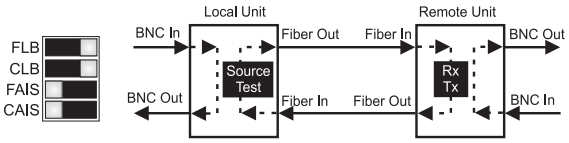

Figure D: Remote Loopback and DIP-Switch Settings

“FAIS” - Force 1s to Fiber (AIS)

When the “FAIS” DIP-switch is in the ON position, an “all ones” pattern is forced out the Fiber-Out port. The Coax-In data is discarded and Fiber-In data is passed through to BNC-Out. By returning the DIP-switch to the OFF position, the unit resumes normal operation.

“CAIS” - Force 1s to Coax (AIS)

When the “CAIS” DIP-switch is in the ON position, an “all ones” pattern is forced out the BNC-Out port. The Fiber-In data is discarded and BNC-In data is passed through to Fiber-Out. By returning the DIP-switch to the OFF position, the unit resumes normal operation.

ON-BOARD DIP-SWITCHES

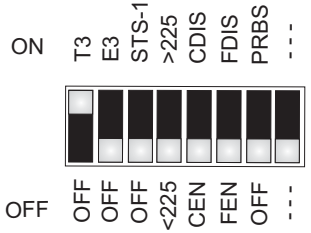

Figure E: Board Mounted DIP-Switches

“T3”, “E3” and “STS-1” - Select Protocol

When the “T3” DIP-switch is in the ON position, the T3 protocol is selected. When the “E3” DIP-switch is in the ON position, the E3 protocol is selected. When the “STS-1” DIP-switch is in the ON position, the STS-1 protocol is selected.

Only one of the three DIP-switches may be in the ON position at any one time. The default setting of the module is T3.

“<225”/“>225” - Coax Build-Out Distance

When this DIP-switch is in the OFF position, a distance of less than 225 ft. is selected. When in the ON position, a distance of 225 ft. or higher is selected. Select the appropriate distance for your application.

“CEN”/“CDIS” and “FEN”/“FDIS” - Port Control

When both DIP-switches are in the OFF position, the ports are enabled. When the “CEN”/”CDIS” is in the ON position, the coax port is disabled. When the “FEN”/”FDIS” is in the ON position, the fiber port is disabled.

“PRBS” - Pseudo Random Pattern Generator

When in the ON position, the converter forces Pseudo Random pattern out of the Coax-Out port. The data received at Fiber-In is discarded and the data at Coax-In is passed through to Fiber-Out.

Note: Some combinations of DIP-switch settings are illegal, and will be indicated by the Fiber Test “TST” LED blinking quickly three times followed by a pause.

2) INSTALL MODULE IN CHASSIS AND CONNECT CABLES

a. Carefully slide the module into an open slot in the chassis. Align the module with the installation guides and ensure that the module is firmly seated against the backplane. Secure the module by fastening the front panel thumbscrew (push in and turn clockwise to tighten) to the chassis front. Verify the “Pwr” LED is ON (indicating the chassis is powered).

b. When using the SFP model (8759-0), insert the SFP Fiber transceiver into the Port 1 SFP receptacle on the T3/E3 converter (see the SFP Data Sheet 091-17000-001 for supported transceivers).

NOTE: The release latch of the SFP Fiber transceiver must be in the closed (up) position before insertion.

c. Connect the BNC cables to the T3/E3 converter and attach the other end of the cables to appropriate network equipment. The Transmit must attach to the Receive and the Receive must attach to the Transmit.